IN THE CLAIMS:

1. (Currently Amended) A method of pumping wellbore liquid, comprising:

installing an electric submersible pump, driven by an AC synchronous permanent magnet motor, in a wellbore; and

operating the pump at more than 4,500 rpm to pump the wellbore liquid,

wherein the motor is at least a three-phase motor and the three phases are continuously driven.

2. (Canceled)

3. (Canceled)

4. (Previously Presented) A method according to claim 1, wherein the pump is a centrifugal pump.

5. (Previously Presented) A method according to claim 1, further comprising recovering the wellbore liquid to the surface.

6. (Previously Presented) A method according to claim 1, further comprising transporting the wellbore liquid from a first subterranean location to a second subterranean location.

7. (Previously Presented) A method according to claim 1, wherein the pump is operated at more than 5,000 rpm.

8. (Previously Presented) A method according to claim 1, wherein the pump is operated at 7,000 to 7,500 rpm.

9. (Previously Presented) A method according to claim 4, wherein the pump draws the wellbore liquid from a plurality of lateral wellbores into a central pump.

10-32. (Canceled)

33. (Previously Presented) A method according to claim 1, wherein the pump is operated at more than 6,000 rpm.

34. (Previously Presented) A method according to claim 1, wherein the pump is operated at approximately 7,200 rpm.

35. (Canceled)

36. (Previously Presented) A method according to claim 1, wherein:

a power supply of the motor is located at the surface, and

the power supply models operation of the motor and calculates a rotor position of the motor.

37. (Previously Presented) A method according to claim 1, wherein a power supply of the motor comprises a variable voltage chopper.

38. (Currently Amended) A method according to claim 1, wherein the motor comprises:

a rotor, comprising:

a central shaft;

~~a plurality of permanent magnets equiangularly spaced about the shaft;~~

a plurality of tubular elements ~~supporting the permanent magnets~~ spaced ~~at different axial locations~~ axially along the shaft; and

a plurality of support rings spaced axially along the shaft between the tubular elements and serving to support the tubular elements on the shaft so that the tubular elements are rotatable with the shaft;

a plurality of permanent magnets spaced about a circumferential outer surface of each of the tubular elements;

a ~~retaining~~ respective retention sleeve tightly fitted over the permanent magnets on each tubular element so as to retain the permanent magnets on the ~~shaft~~ tubular element; and

a stator coaxial with the rotor, comprising:

a stack of laminations; and

radially spaced coils wound around the stack.

39. (Previously Presented) A method according to claim 1, wherein the motor comprises:

a rotor, comprising:

a central shaft; and

a carrier sleeve loosely fitted on the shaft; and

rings closely engaging the shaft and supporting the carrier sleeve; and

a stator coaxial with the rotor, comprising:

a stack of laminations; and

radially spaced coils wound around the stack.

40. (Currently Amended) A method according to claim 1, wherein the motor comprises:

a rotor, comprising:

a central shaft; and

a plurality of permanent magnets having axial ends;

a carrier sleeve mounted on the shaft and bearing the magnets;

a retention sleeve extending over the magnets ~~and having at least one end turned in over~~; and

at least one stress-relieving radially outwardly extending abutment part on the carrier sleeve abutting an adjacent axial end of the magnets,

wherein the retention sleeve hast at least one end portion turned in over the abutment part to retain the magnets in position on the carrier sleeve without damaging the axial end of the magnet.

41. (Previously Presented) A method according to claim 1, wherein the motor comprises:

a rotor, comprising:

an elongate central shaft; and

elongate permanent magnets extending along the shaft, the magnets comprising axially laminated parts to reduce eddy current losses; and

a stator coaxial with the rotor.

42. (Currently Amended) A method according to claim 1, wherein the motor comprises:

a rotor;

a stator coaxial with the rotor;

a bearing mounting the rotor to the stator;

a resiliently biased projection disposed on one of the stator and the bearing; and

a receiver disposed on the other of the stator and the bearing,

wherein the projection is operable, by rotation of the rotor, to engage the receiver, thereby rotationally coupling the bearing and the stator.

43. (Previously Presented) A method according to claim 1, wherein the motor comprises:

a rotor;

a housing;

a stator coaxial with the rotor and mounted in the housing;

an axial groove formed in one of the stator and the housing; and

an axial key engaging the axial groove, thereby rotationally coupling the housing and the stator.

44. (New) A method of pumping wellbore liquid, comprising:

installing an electric submersible pump, driven by an AC synchronous permanent magnet motor, in a wellbore; and

operating the pump at more than 4,500 rpm to pump the wellbore liquid,

wherein:

a power supply of the motor is located at the surface, and

the power supply models operation of the motor and calculates a rotor position of the motor.

45. (New) A method according to claim 44, wherein the pump is a centrifugal pump.

46. (New) A method according to claim 44, further comprising recovering the wellbore liquid to the surface.

47. (New) A method according to claim 44, further comprising transporting the wellbore liquid from a first subterranean location to a second subterranean location.

48. (New) A method according to claim 44, wherein the pump is operated at more than 5,000 rpm.

49. (New) A method according to claim 44, wherein the pump is operated at 7,000 to 7,500 rpm.

50. (New) A method according to claim 45, wherein the pump draws the wellbore liquid from a plurality of lateral wellbores into a central pump.

51. (New) A method of pumping wellbore liquid, comprising:

installing an electric submersible pump, driven by an AC synchronous permanent magnet motor, in a wellbore; and

operating the pump at more than 4,500 rpm to pump the wellbore liquid,

wherein a power supply of the motor comprises a variable voltage chopper.

52. (New) A method according to claim 51, wherein the pump is a centrifugal pump.

53. (New) A method according to claim 51, further comprising recovering the wellbore liquid to the surface.

54. (New) A method according to claim 51, further comprising transporting the wellbore liquid from a first subterranean location to a second subterranean location.

55. (New) A method according to claim 51, wherein the pump is operated at more than 5,000 rpm.

56. (New) A method according to claim 51, wherein the pump is operated at 7,000 to 7,500 rpm.

57. (New) A method according to claim 52, wherein the pump draws the wellbore liquid from a plurality of lateral wellbores into a central pump.

58. (New) A method of pumping wellbore liquid, comprising:

installing an electric submersible pump, driven by an AC synchronous permanent magnet motor, in a wellbore; and

operating the pump at more than 4,500 rpm to pump the wellbore liquid,

wherein the motor comprises:

a rotor, comprising:

a central shaft;

a plurality of tubular elements spaced axially along the shaft; and

a plurality of support rings spaced axially along the shaft between the tubular elements and serving to support the tubular elements on the shaft so that the tubular elements are rotatable with the shaft;

a plurality of permanent magnets spaced about a circumferential outer surface of each of the tubular elements;

a respective retention sleeve tightly fitted over the permanent magnets on each tubular element so as to retain the permanent magnets on the tubular element; and

a stator coaxial with the rotor, comprising:

a stack of laminations; and

radially spaced coils wound around the stack.

59. (New) A method of pumping wellbore liquid, comprising:

installing an electric submersible pump, driven by an AC synchronous permanent magnet motor, in a wellbore; and

operating the pump at more than 4,500 rpm to pump the wellbore liquid,

wherein the motor comprises:

a rotor, comprising:

a central shaft; and

a carrier sleeve loosely fitted on the shaft; and

rings closely engaging the shaft and supporting the carrier sleeve; and

a stator coaxial with the rotor, comprising:

a stack of laminations; and

radially spaced coils wound around the stack.

60. (New) A method of pumping wellbore liquid, comprising:

installing an electric submersible pump, driven by an AC synchronous permanent magnet motor, in a wellbore; and

operating the pump at more than 4,500 rpm to pump the wellbore liquid,

wherein the motor comprises:

a rotor, comprising:

a central shaft; and

a plurality of permanent magnets having axial ends;

a carrier sleeve mounted on the shaft and bearing the magnets;

a retention sleeve extending over the magnets; and

at least one stress-relieving radially outwardly extending abutment part on the carrier sleeve abutting an adjacent axial end of the magnets,

wherein the retention sleeve hast at least one end portion turned in over the abutment part to retain the magnets in position on the carrier sleeve without damaging the axial end of the magnet.

61. (New) A method of pumping wellbore liquid, comprising:

installing an electric submersible pump, driven by an AC synchronous permanent magnet motor, in a wellbore; and

operating the pump at more than 4,500 rpm to pump the wellbore liquid,

wherein the motor comprises:

a rotor, comprising:

an elongate central shaft; and

elongate permanent magnets extending along the shaft, the magnets comprising axially laminated parts to reduce eddy current losses; and

a stator coaxial with the rotor.

62. (New) A method of pumping wellbore liquid, comprising:

installing an electric submersible pump, driven by an AC synchronous permanent magnet motor, in a wellbore; and

operating the pump at more than 4,500 rpm to pump the wellbore liquid,

wherein:

the motor comprises:

a rotor;

a stator coaxial with the rotor;

a bearing mounting the rotor to the stator;

a resiliently biased projection disposed on one of the stator and the bearing; and

a receiver disposed on the other of the stator and the bearing, and

the projection is operable, by rotation of the rotor, to engage the receiver, thereby rotationally coupling the bearing and the stator.

63. (New) A method of pumping wellbore liquid, comprising:

installing an electric submersible pump, driven by an AC synchronous permanent magnet motor, in a wellbore; and

operating the pump at more than 4,500 rpm to pump the wellbore liquid,

wherein the motor comprises:

a rotor;

a housing;

a stator coaxial with the rotor and mounted in the housing;

an axial groove formed in one of the stator and the housing; and

an axial key engaging the axial groove, thereby rotationally coupling the housing and the stator.